GEOTECH

Geotech International Pty Ltd
ABN 59 057668 434
17 Browne St
Subiaco 6008
Western Australia
tel: +61407712768
email: paskins@westnet.com.au
web: http://www.onestoptenementshop.com/

MOINA PROJECT – SUMMARY- April 2020

(an INFORMATION MEMORANDUM is available on request)

SUMMARY

For sale at a bargain price: includes the tenement and all data on past exploration and metallurgical investigations. $1.4 million expended to date- sale price a fraction of that.

The project area contains the largest fluorite resource (exceeding 15% fluorite) in Australia. Mineralisation also includes tungsten, tin, bismuth, magnetite, gold and zinc.

The fluorite market is predicted by one analyst to double in the next 6 years.

Tenure is a 2 sq km Retention Licence, in northern Tasmania only 85 km from the port of Burnie, in an area with highly favourable infrastructure, including electricity, quality water and skilled workforce. The current licence term expires on 21 October 2020, and is renewable. Most of the area is Crown Land covered with secondary regrowth forest, none of which requires preservation.

Mineralisation consists of a large body of fine grained fluorite-magnetite- vesuvianite/garnet skarn ("wrigglite") and a smaller zinc-gold bearing skarn, (Hugo skarn). The skarns contain low abundances of potentially valuable scheelite, cassiterite and bismuthinite.

A JORC compliant inferred resource of **24.6Mt at 16% CaF_2, 17% Fe, 0.1% Sn, 0.1% WO_3** has been estimated for the main open pittable parts of the wrigglite body.

The Hugo skarn is estimated from a few drill holes to potentially be 250,000t to 300,000t at approximately 0.8g/t gold, 5% zinc, and 0.07% bismuth.

There is substantial exploration potential to increase the wrigglite resource and Hugo gold/zinc skarn with further drilling. There are targets, as yet untested, for zones of scheelite bearing veinlets with higher grades and coarser grain size more amenable to beneficiation.

Extensive metallurgical studies have been done to assess extraction of fluorite, magnetite, scheelite, and cassiterite. The fine grained wrigglite offers challenges for high recoveries of high grade concentrates, but a conventional magnetic, flotation and gravity flowsheet has been recommended to produce metallurgical grade fluorite concentrate, albeit requiring agglomeration. By-product scheelite and a possibly marketable magnetite can be recovered.

A Mining Scoping study has been completed.

Figure 1: Moina location

GEOLOGY AND MINERALISATION

A sequence of Ordovician sandstone overlain by limestone, flat lying except where folded by NW trending faults. Intruded by Devonian granite, which is 200m below surface.
Large zone of metasomatic/ hydrothermal alteration above the granite, with fluid access controlled by the faults, producing a variety of fluorine rich skarns, which have replaced calcareous rocks.

Mineralisation in the Tenement includes

- Fluorite-magnetite-vesuvianite-garnet skarn ("wrigglite") replacing limestone;
- Calc-silicate rocks below wrigglite, replacing calcareous sandstone;
- Scheelite bearing feldspar veinlet swarms, especially in wrigglite and calc-silicates;
- Zn-Bi-Au skarns, (Hugo Skarn), being local retrograde replacement of wrigglite east of the Bismuth Creek Fault;
- Auriferous pyrrhotite skarn west of the main wrigglite body;
- A set of E-W trending vertical quartz veins, which cut the skarns and sandstone. These carry significant Sn-W-Bi-Mo mineralisation (coarse cassiterite, wolframite and bismuthinite) and were mined (Shepherd & Murphy Mine) from the 1890s to 1957.

The geology and mineralogy of the Moina skarns is described in detail in:

"Geology and Genesis of the F-Sn-W (-Be-Zn) Skarn (Wrigglite) at Moina, Tasmania", by Kwak, TAP, Askins, PW, Econ. Geol. Vol. 76, 1981. pp 439-467.

Tertiary basalts cover substantial sections of the Tenement area.

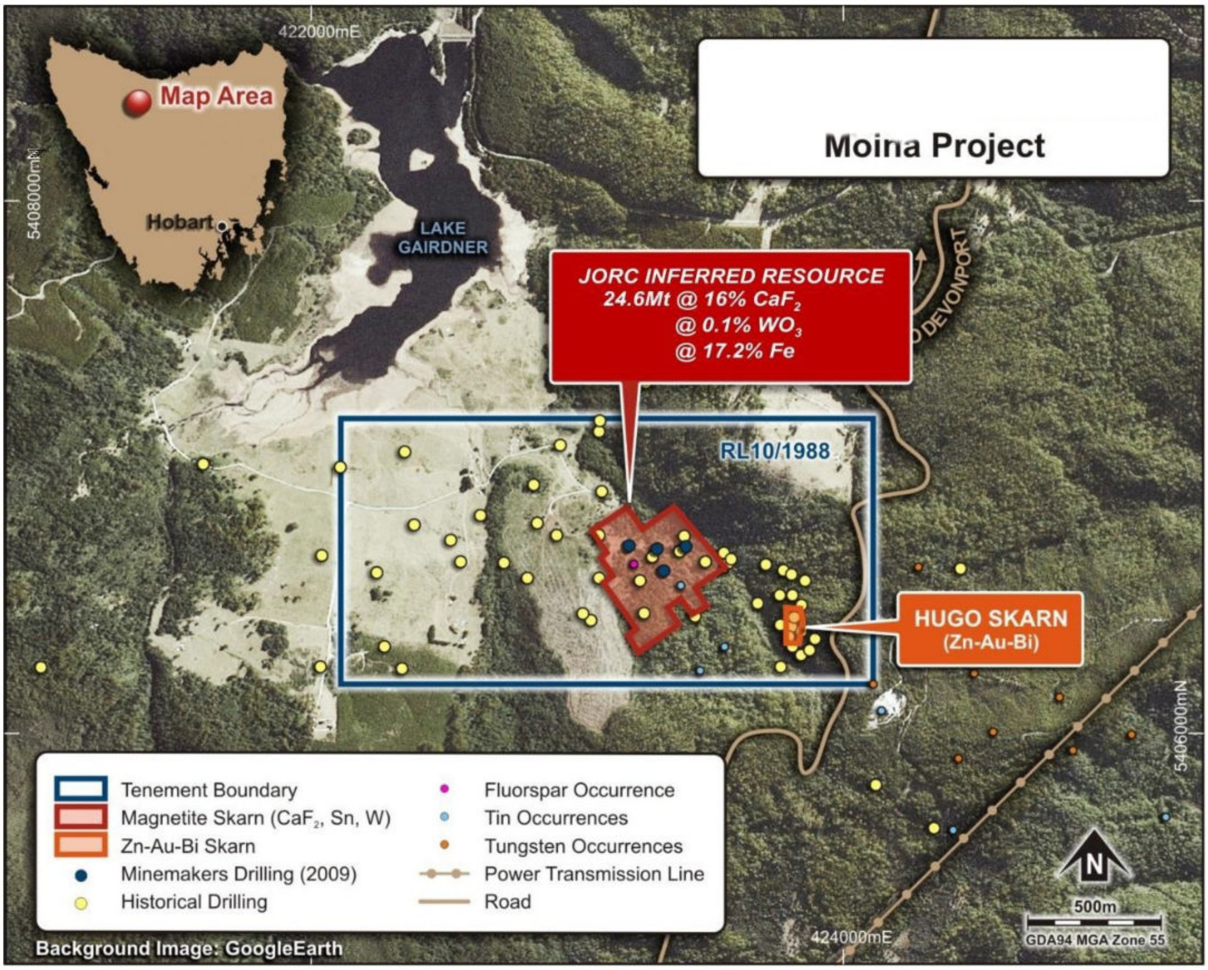


Figure 2: Tenement and resource areas, with drill hole locations.

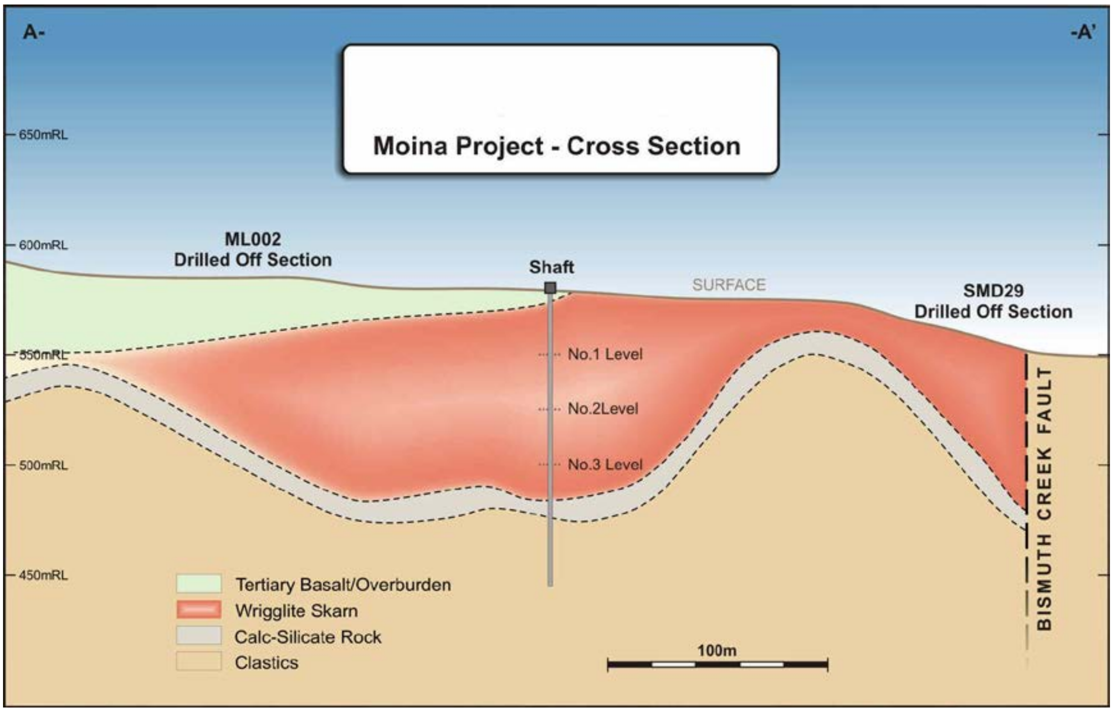


Figure 3: Simplified cross section from central parts of resource.

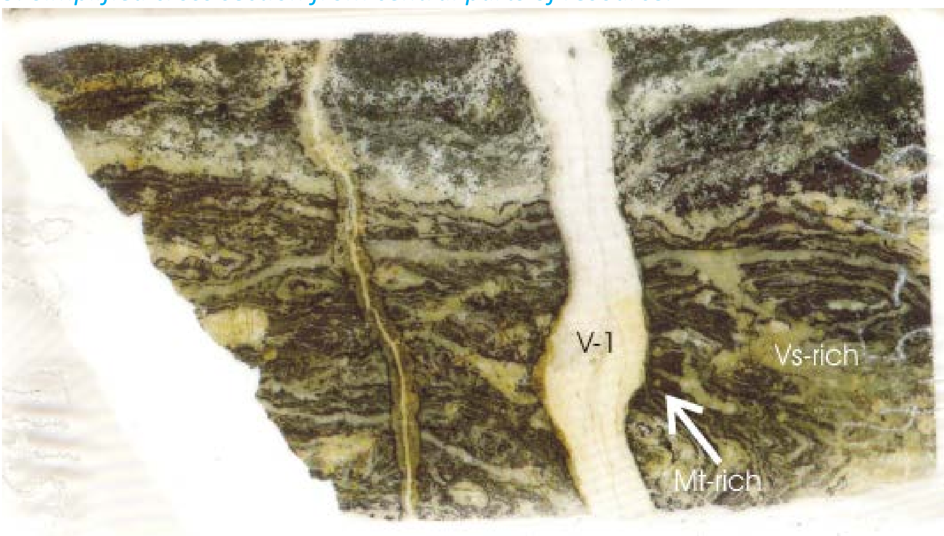


Figure 4: Wrigglite consisting mainly of magnetite (Mt) and vesuvianite-garnet (Vs). V-1 is an adularia and fluorite veinlet, containing scattered scheelite. Thin section from drill core 4 cm diameter.

PREVIOUS EXPLORATION WORK

In 1878 the Shepherd and Murphy vein system was discovered.

In the early 1970s the first modern company exploration by the Mt Lyell Mining and Railway Company Limited. Drilling for vein type mineralisation. Two holes intersected wrigglite skarn but Mt Lyell did not recognize its potential.

In the mid to late 1970s, Comalco, seeking a source of fluorite for use in their aluminium smelter at Bell Bay in northern Tasmania. Drilling, preliminary metallurgical investigations, estimated tonnage and grade of the wrigglite resource.

From 1980 to 1985, Shell in joint venture with Comalco. Drilling.

From 1985 to 1990 CRA Exploration joined the joint venture. Drilling. All holes analysed for gold.

1993- 1997 a joint venture with Goldstream Mining and Titan Resources. Drilling at Hugo Zn/Au skarn.

In 1994 Shell's interest sold to Acacia Resources.

In 1999 Anglogold acquired Acacia's interest.

In 2004 the property was acquired 100% by Geotech.

In 2005 Minemakers NL had an option to purchase project from Geotech. In 2010 Minemakers assigned its rights to TNT Mines.

From 2006 to 2015 Minemakers and TNT's work included drilling for samples for metallurgical studies, a mining heritage survey, a maiden JORC resource estimate, and a mining scoping study.

In 2015 TNT withdrew from the option-to-purchase agreement, so Geotech now has 100% ownership of the project.

In 2016- 2019 Geotech retrieved diamond drill core and metallurgical samples, assembled past data, reviewed exploration potential, and generated exploration targets.

EXPLORATION POTENTIAL

Targets identified by Geotech for substantial additional and higher grade resources:-

- additional wrigglite, open pittable, outside the current JORC resource;
- higher tenor scheelite mineralisation in areas containing feldspar veinlet swarms inside the known JORC resource. Possibly are more altered and thus could carry coarser cassiterite more amenable to viable beneficiation;
- extra gold-zinc rich skarn in the Hugo area along a central Fault;

Geotech studies of exploration potential, have also included:-
The structural setting of mineralisation;
Review of potentially valuable major, minor and trace elements: In wrigglite the fluorite, tin and tungsten are the main valuable components, but there may be value in by-product extraction of Bi, Be, and Mo. Cs is of potential interest and needs further study. For the Hugo skarn there is also gols and zinc but indium requires analysis. No attractive levels of lithium occur in skarns or greisen.

RESOURCES

In 1957 for the Shepherd and Murphy vein system, an estimate of "possible plus probable remaining reserves" of 77 000t @0.2% Sn 0.4% WO_3 was made by Robinson for Tasmanian Department of Mines. This was in areas above existing stopes.

In 1979 Comalco estimated a potential wrigglite resource (pre JORC) of **26.5Mt @ 18% CaF_2, 0.1% Sn, 0.1% W.** The resource included only open-pittable wrigglite. Did not include the complex Hugo skarn.

In 1997 Goldstream/Titan. Hugo skarn estimate; resource potential of 250,000t to 300,000t at approximately 0.8g/t gold, 5% zinc, and 0.07% bismuth.

In 2012 TNT. JORC compliant inferred resource of **24.6Mt at 16% CaF_2, 17% Fe, 0.1% Sn, 0.1% WO_3** for the main wrigglite body, excluding Hugo's skarn. The area of the resource is essentially the same as that of the 1979 Comalco estimate. Lower fluorite grade compared to the 1979 Comalco estimate is caused by lower CaF_2 grade of holes drilled by Minemakers compared to those by Comalco. More drilling, and check analyses of existing holes, would be required to assess which estimate is more accurate.

Much of the overburden on the wrigglite resource is solid basalt, which is potentially saleable for local aggregate.

METALLURGY

A number of studies have been carried out, here summarized by year:-

<u>Pre 1975</u>

Several of studies centred on tin tungsten and bismuth recovery from quartz veins and tailings at the Shepherd and Murphy Mine.

<u>1975-1980</u>

Major studies on the wrigglite:

A. Amdel: a chemical/roasting process. Also extensive physical beneficiation studies, with emphasis on flotation methods, concluding inter-alia that: Grinding to 17 µm was necessary for good liberation of fluorite and by fine grinding and flotation a concentrate assaying 92.5% CaF_2 with a recovery of 65% was produced.

B. Department of Mines Tasmania
Scout tests applying heavy liquid separation, magnetic separation, gravity separation, and flotation of sulphides and fluorite at three degrees of grinding.
Conclusions: very fine grinding of the wrigglite would be necessary in future work.
Scheelite recovery tests, using successive grinding and concentration with magnetic and gravity techniques and flotation to remove sulphides. Results: Scheelite overall recovery by tabling was only 33% producing a concentrate of only 22.7% WO_3, due to presence of scheelite-magnetite composites and because 39% of the overall WO_3 was finer than 16 µm and unrecoverable by gravity concentration methods. Low tin recoveries because much as very fine inclusions in garnet. A sulphide flotation concentrate, (chiefly pyrite, with a head

grade of 0.8% S), contained 13.8% Zn, 1.7% Bi, and 1.25 g/t Au. Disappointing overall results, but not definitive given that concentration methods were merely by conventional gravity techniques.

2011

SGS Minerals Services group, Canada: QEMSCAN used to determine (a) mineral distributions by size fractions; (b) deportment of F and Sn; (c) locking/association and grain size characteristics of the fluorite, cassiterite, Bi-minerals, scheelite, sulphides (mainly pyrite) and Fe-Oxides; (d) determinative mineralogical parameters such as mineral release and grade recovery; and (e) simulate mineral processing options.

2012

A.Magnetite Recovery Study, using prior petrological, QEMSCAN and Davis Tube data, examined potential to recover magnetite into a saleable product.
The Davis Tube work was unreliable, at odds with QEMSCAN which indicated that better liberation could be achievable, further Davis Tube testing was recommended, using multiple stage grinding and carefully monitored test conditions.

B. AMMTEK TESTWORK at Burnie and Perth labs.
Testwork included:
Crushing, ball mill work index
Heavy liquid separation (ineffective)
Magnetic separation, cyclone classification
Gravity separation of scheelite
Flotation of fluorite
Flotation of scheelite (reagent chosen gave poor results)
Davis tube tests
Super Panner tests

Results:
Tin even at fine grinds gave very poor recoveries confirming the mid 1970s testwork.
Therefore three minerals were targeted for recovery in the testwork: magnetite, scheelite, and fluorite. Bismuthinite was not studied.
The testwork indicates that the nominal plant design would be:
Crush to a suitable size for ball mill feed;
Grind to 500 µm and do a first magnetic separation;
The magnetics would be ground to the final product size – possibly in two stages;
Non-magnetics would be processed to remove the scheelite – keeping the size as coarse as possible to reduce sliming but grinding the remaining tails to a fine size for fluorite recovery;
Recovery of non-magnetics from the magnetic side should marginally increase the yields though the fine grinding will tend to lose scheelite to sliming.

The overall recoverable fluorite, scheelite and magnetite had a value (in 2012) of about $67/t ore, with no allowance for Sn and Bi. This value was regarded as conservative, with considerable scope for enhancing scheelite and fluorite yield.

Recommended Follow-up: On the non-magnetics 500 µm fraction, gravity beneficiation be conducted to assist in recovering more scheelite, and float work to determine if the fluorite reaches an optimal marketable grade. Investigate the marketability of the magnetite given the level of impurities in the final product.

MINING SCOPING STUDY

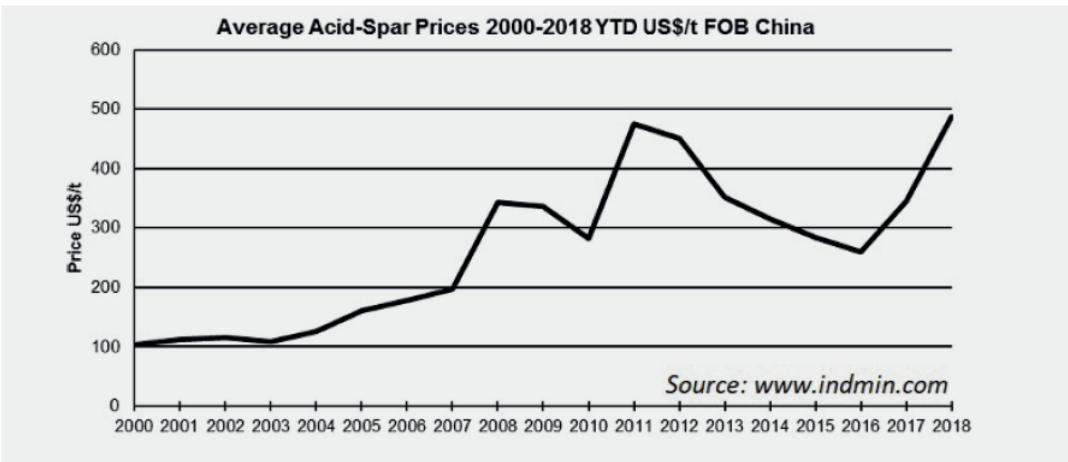
In 2012 Jacobs, a large international engineering company, carried out a desktop scoping study on a mining operation, estimating CAPEX and OPEX for an 800,000 t/yr open pit mining operation producing magnetite, fluorite and scheelite concentrates.
Adjusted results, done later by Mintrex in 2013, were:
Capital costs: Total Project $150M of which Plant $110M
Operating Costs $37.50/t ore, inclusive of about $12/t mining and $17/t processing.

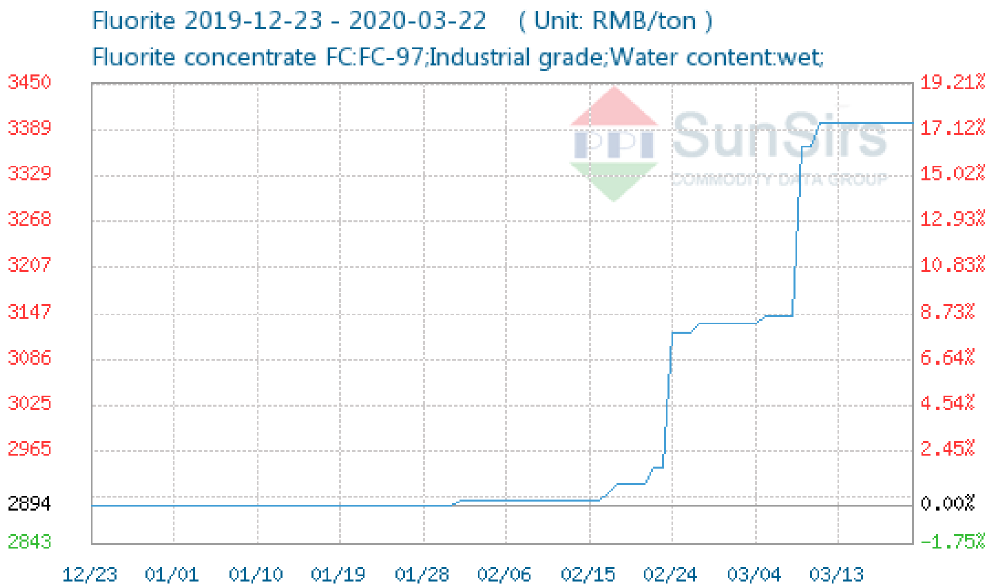
FLUORITE USES AND MARKETS

Fluorspar is classified as a strategic mineral by the United States of America and the European Union.
There is a global market value of approximately US$2 billion and an annual demand of 6Mt per annum.
Two primary commercial grades of fluorspar:
- acid grade, >97% CaF_2, ~63% of total fluorspar production, currently about US$475/t.
- metallurgical grade, 60-96% CaF_2.

Acid grade is used for manufacture of hydrofluoric acid, used to make fluorochemicals, and aluminium fluoride used as a flux to smelt aluminium. Fluorochemicals include refrigerants, propellants; fluorochemicals are used in electrical and electronic appliances, metallurgical industry, Li-ion batteries, pharmaceuticals, polymers, and agrochemicals.
Metallurgical grade used mainly as a flux in steelmaking.

China is the largest producer, accounting for around 60% of world output of 5.8m tonnes in 2018, followed by Mexico, South Africa, Mongolia, Vietnam, and Spain. Commencing in 2017 China has become a net importer of fluorspar.
The main markets for acid grade are China, USA, Italy, India, and Germany, reflecting the main centres of fluorochemical manufacturing.
A tight supply has meant steady increase in prices. Prices are about 5 times higher than year 2000 levels. A recent published prediction is that there will be a shortage of 600,000 t to 800,000 t globally by 2026, despite new production. The fluorite market is predicted by one analyst to double in the next 6 years.





Disclaimer

Geotech International Pty Ltd intends that the Information in this document is true and accurate but does not warrant or otherwise accept responsibility for the truth or accuracy of the Information or for any advice given or opinion expressed by any of its officers, employees or agents.

Moina – old mill footings